



A NEW GIGABIT SOFTWARE MODEM AND IT'S CLOUD DEPLOYMENT: CONCEPT AND CAPABILITIES

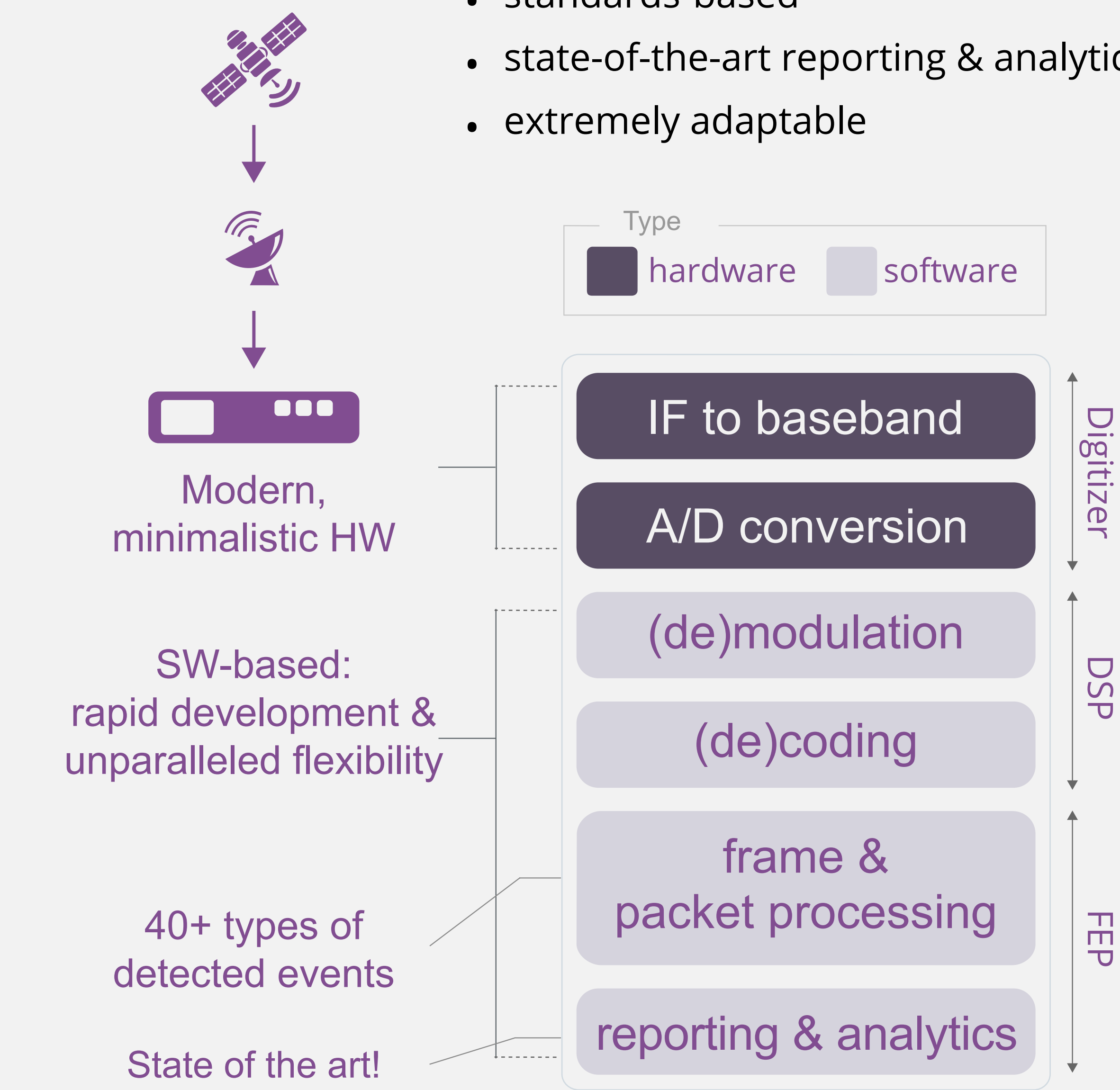
Software Modem Architecture

Receivers typically have 3 components: a digitizer to digitize the signal, a digital signal processor to demodulate and decode it and a front-end processor to handle frame and packet level processing.

The digitizer receives analogue input, so it has to be a hardware device. Blink implements everything else as high-performance software, making it extremely quick to extend and customise for new missions, as well as cost-competitive. In addition, all 3 components are completely independent and can work together with third party digitizers or modems.

This is only possible because Blink is the fastest software receiver in the world, achieving information rates in excess of 1 Gb/s, i.e. receiving a full X-band channel at 32APSK on a single machine.

- near real-time or store-and-forward
- standards-based
- state-of-the-art reporting & analytics
- extremely adaptable



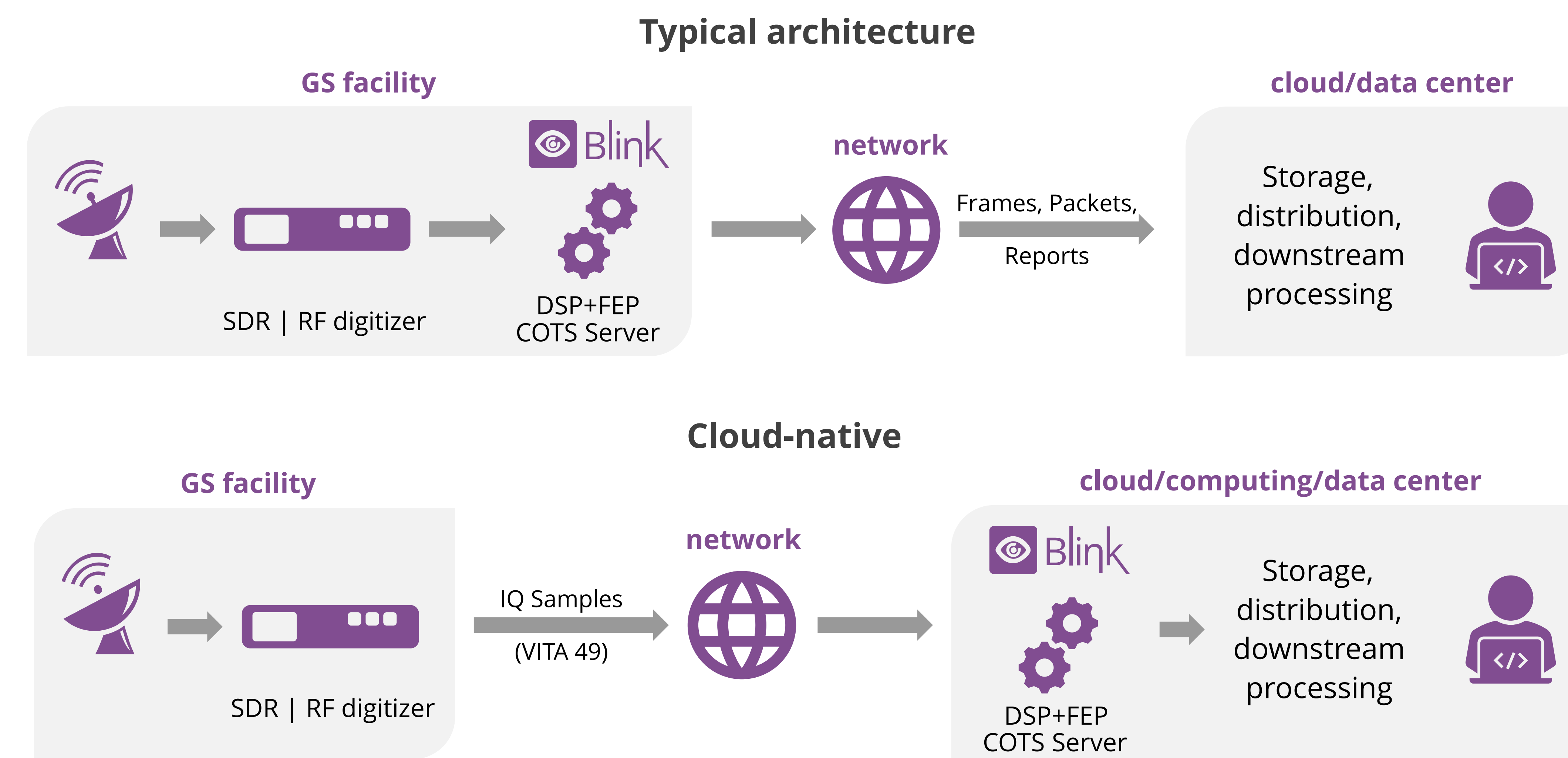
Highlights

- modulations from QPSK to 32APSK
- CCSDS and DVB-S2 coding schemes
- CCM/VCM/ACM support
- channel conditioning
- full X-band channels on a single server

Typical and Cloud-native Deployment

A software modem already brings benefits in a typical ground station architecture: rapid upgrades and adjustments for new missions, easy management and cost-effectiveness.

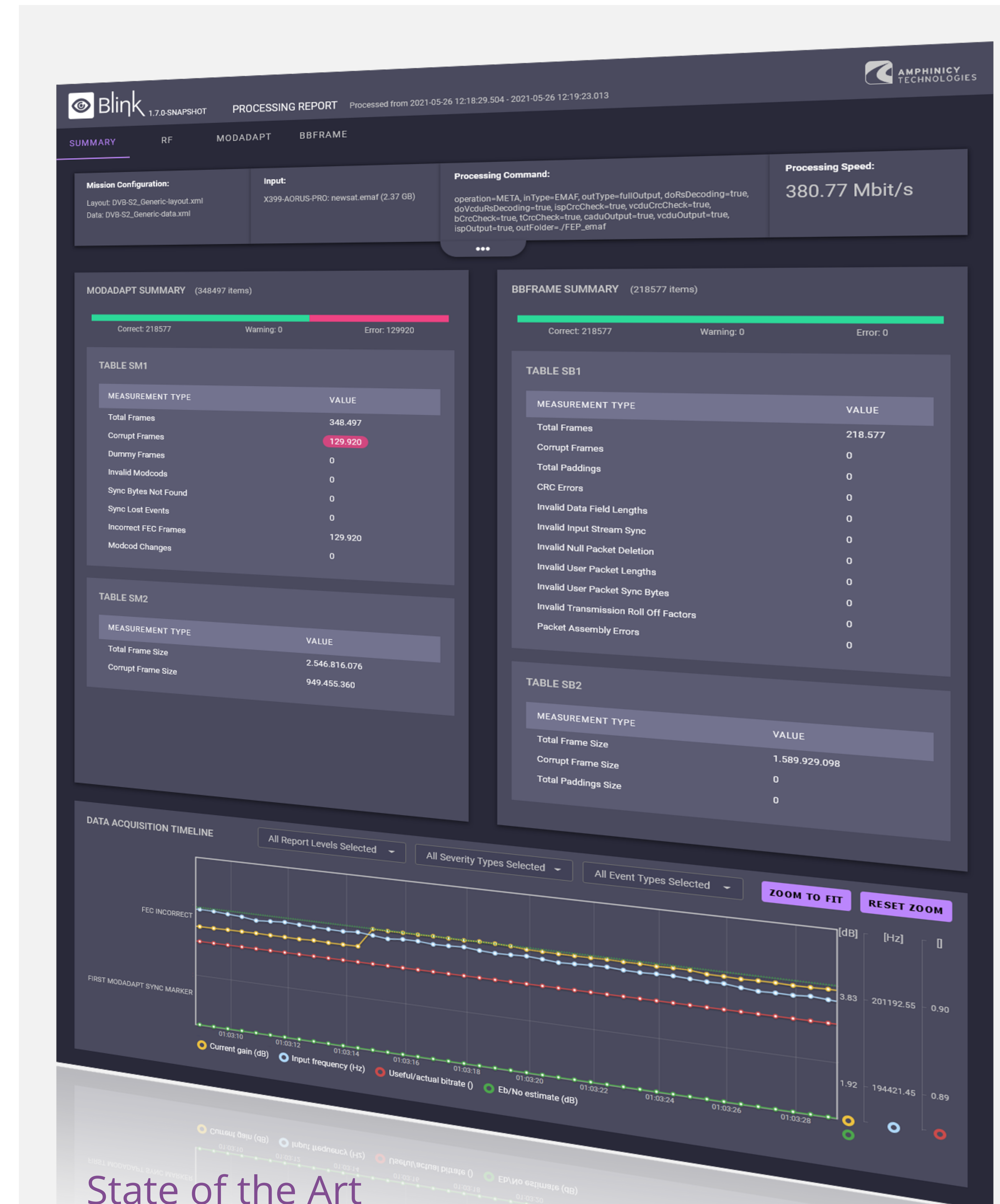
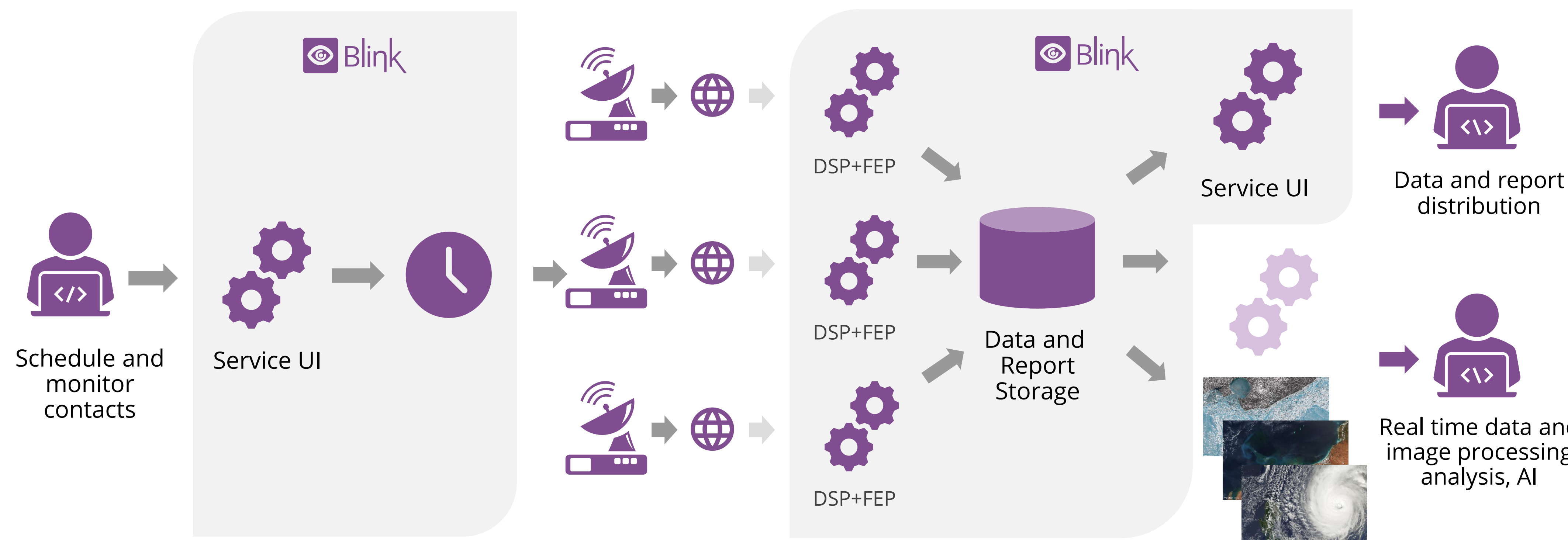
The Cloud brings out additional benefits, like extremely efficient resource utilisation, scaling and flexible licensing models like per-minute use, just to name a few.



Cloud Edition

A software modem lends itself to new kinds of architectures and makes excellent use of the Cloud.

"Blink Cloud Edition" provides a central web interface where users can get a unified list of satellite passes over all ground stations available in the cloud. Once the user chooses a pass, the system reserves the antennas needed to process the signal live. Just before a pass, the system starts virtual machines to run the software receiver. Once payload reception is complete, the machines are shut down. Minimal cost, maximum efficiency, maximum flexibility.



State of the Art Reception Analytics

Blink's roots are in satellite assembly, integration and testing. As a result, it provides state of the art stream analytics, with 40 different events of varying severities being detected and reported.

This wealth of information is provided in comprehensive detail, in clear summaries and on a timeline, next to other events, so that correlations between different events are obvious, e.g. a frame counter jump is no surprise just after a damaged frame is received.

Reports are self-contained and available in machine- and user-readable formats (JSON, HTML) and therefore easy to share with colleagues, review and archive.